



Complete Summary

TITLE

Cardiac rehabilitation: percentage of eligible inpatients with a qualifying event/diagnosis who have been referred to an outpatient cardiac rehabilitation program prior to hospital discharge or have a documented medical or patient-centered reason why such a referral was not made.

SOURCE(S)

Thomas RJ, King M, Lui K, Oldridge N, Pina IL, Spertus J, ACC/AHA Task Force Members. AACVPR/ACC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. J Cardiopulm Rehabil Prev 2007 Sep-Oct;27(5):260-90. [74 references] [PubMed](#)

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Measure Domain

PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

SECONDARY MEASURE DOMAIN

Does not apply to this measure

Brief Abstract

DESCRIPTION

This measure is used to assess the percentage of eligible inpatients with a qualifying event/diagnosis who have been referred to an outpatient cardiac rehabilitation program prior to hospital discharge or have a documented medical or patient-centered reason why such a referral was not made.

RATIONALE

There has been growing scientific evidence over the past 3 decades on the benefits of cardiac rehabilitation (CR) services for persons with cardiovascular disease (CVD). Evidence suggests that the benefits of CR services are as significant in recent years as they were in the prethrombolytic era. Because of this mounting evidence, a number of healthcare organizations have endorsed the use of CR services in persons with CVD by including provisions for CR in their practice guidelines and practice management position papers.

Despite both the known benefits of CR and the widespread endorsement of its use, CR is vastly underutilized, with less than 30% of eligible patients participating in a CR program after a CVD event. Reasons for this gap in CR participation are numerous, but the most critical and potentially most correctable reasons revolve around obstacles in the initial referral of patients to CR programs. These obstacles can be reduced through the systematic adoption of standing orders and other similar tools for CR referral for appropriate hospitalized patients. Furthermore, physician accountability associated with the use of these performance measures may lead to new and novel approaches to improve both referral rates and the outcome of patients with CVD.

A key component to outpatient (CR) program utilization is the appropriate and timely referral of patients. Generally, the most important time for this referral to take place is while the patient is hospitalized for a qualifying event/ diagnosis (myocardial infarction [MI], chronic stable angina [CSA], coronary artery bypass graft [CABG] surgery, percutaneous coronary intervention [PCI], cardiac valve surgery, or cardiac transplantation).

This performance measure has been developed to help healthcare systems implement effective steps in their systems of care that will optimize the appropriate referral of a patient to an outpatient CR program. This measure is designed to serve as a stand-alone measure or, preferably, to be included within other performance measurement sets that involve disease states or other conditions for which CR services have been found to be appropriate and beneficial (e.g., following MI, CABG surgery).

Effective referral of appropriate inpatients to an outpatient CR program is the responsibility of the healthcare team within a healthcare system that is primarily responsible for providing cardiovascular care to the patient during the hospitalization.

PRIMARY CLINICAL COMPONENT

Acute myocardial infarction (AMI); chronic stable angina (CSA); coronary artery bypass graft (CABG) surgery; percutaneous coronary intervention (PCI); cardiac valve surgery; cardiac transplantation; outpatient cardiac rehabilitation; referral

DENOMINATOR DESCRIPTION

Number of hospitalized patients in the reporting period hospitalized with a qualifying event/diagnosis who do not meet any of the specified exclusion criteria (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

NUMERATOR DESCRIPTION

Number of eligible patients with a qualifying event/diagnosis who have been referred to an outpatient cardiac rehabilitation (CR) program prior to hospital discharge or have a documented medical or patient-centered reason why such a referral was not made (see the related "Numerator Inclusions/Exclusions" field in the Complete Summary)

Evidence Supporting the Measure

EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
- A systematic review of the clinical literature
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

NATIONAL GUIDELINE CLEARINGHOUSE LINK

- [ACC/AHA 2004 guideline update for coronary artery bypass graft surgery: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines \(Committee to Update the 1999 Guidelines for Coronary Artery Bypass Graft Surgery\).](#)
- [ACC/AHA 2005 guideline update for the diagnosis and management of chronic heart failure in the adult. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines \(Writing Committee to Update the 2001 Guidelines for the Evaluation and Management of Heart Failure\).](#)
- [Evidence-based guidelines for cardiovascular disease prevention in women: 2007 update.](#)

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Overall poor quality for the performance measured

EVIDENCE SUPPORTING NEED FOR THE MEASURE

Centers for Disease Control and Prevention (CDC). Receipt of cardiac rehabilitation services among heart attack survivors--19 states and the District of Columbia, 2001. MMWR Morb Mortal Wkly Rep 2003 Nov 7;52(44):1072-5.

[PubMed](#)

Cortes O, Arthur HM. Determinants of referral to cardiac rehabilitation programs in patients with coronary artery disease: a systematic review. Am Heart J 2006 Feb;151(2):249-56. [38 references] [PubMed](#)

Thomas RJ, Miller NH, Lamendola C, Berra K, Hedback B, Durstine JL, Haskell W. National Survey on Gender Differences in Cardiac Rehabilitation Programs. Patient characteristics and enrollment patterns. J Cardiopulm Rehabil 1996 Nov-Dec;16(6):402-12. [PubMed](#)

State of Use of the Measure

STATE OF USE

Pilot testing

CURRENT USE

Internal quality improvement

Application of Measure in its Current Use

CARE SETTING

Hospitals

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Physicians

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

TARGET POPULATION AGE

Unspecified

TARGET POPULATION GENDER

Either male or female

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

See the "Rationale" field.

ASSOCIATION WITH VULNERABLE POPULATIONS

Women and the elderly are two populations who are least likely to be referred to early outpatient cardiac rehabilitation programs, despite the fact that they stand to benefit at least as much from such services as other population groups.

EVIDENCE FOR ASSOCIATION WITH VULNERABLE POPULATIONS

Cortes O, Arthur HM. Determinants of referral to cardiac rehabilitation programs in patients with coronary artery disease: a systematic review. Am Heart J 2006 Feb;151(2):249-56. [38 references] [PubMed](#)

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BURDEN OF ILLNESS

Unspecified

UTILIZATION

Unspecified

COSTS

Unspecified

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

Hospitalized patients in the reporting period hospitalized with a qualifying event/diagnosis (see the "Denominator Inclusions/Exclusions" field)

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions

Number of hospitalized patients in the reporting period hospitalized with a qualifying event/diagnosis* who do not meet any of the specified exclusion criteria

*All patients hospitalized with a primary diagnosis of:

- an acute myocardial infarction (MI) or
- chronic stable angina (CSA),

or who during hospitalization have undergone:

- coronary artery bypass graft (CABG) surgery,
- a percutaneous coronary intervention (PCI),
- cardiac valve surgery, or
- cardiac transplantation

Exclusions

- Patient-oriented barriers (patient refusal, for example)
- Provider-oriented criteria (patient deemed to have a high-risk condition or a contraindication to exercise, for example)
- Healthcare system barriers (financial barriers or lack of cardiac rehabilitation [CR] programs near a patient's home, for example)

RELATIONSHIP OF DENOMINATOR TO NUMERATOR

All cases in the denominator are equally eligible to appear in the numerator

DENOMINATOR (INDEX) EVENT

Clinical Condition
Institutionalization
Therapeutic Intervention

DENOMINATOR TIME WINDOW

Time window brackets index event

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions

Number of eligible patients with a qualifying event/diagnosis who have been referred* to an outpatient cardiac rehabilitation (CR) program prior to hospital discharge or have a documented medical or patient-centered reason why such a referral was not made

**A referral* is defined as an official communication between the healthcare provider and the patient to recommend and carry out a referral order to an early outpatient CR program. This includes the provision of all necessary information to the patient that will allow the patient to enroll in an early outpatient CR program. This also includes a communication between the healthcare provider or healthcare system and the CR program that includes the patient's referral information for the program. A hospital discharge summary or office note may potentially be formatted to include the necessary patient information to communicate to the CR program (the patient's cardiovascular history, testing, and treatments, for instance). All communications must maintain appropriate confidentiality as outlined by the 1996 Health Insurance Portability and Accountability Act (HIPAA).

Note: The program may include a traditional CR program based on face-to-face interactions and training sessions or may include other options such as home-based approaches. If alternative CR approaches are used, they should be designed to meet appropriate safety standards.

Inclusions

Unspecified

MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

NUMERATOR TIME WINDOW

Institutionalization

DATA SOURCE

Administrative data
Medical record

LEVEL OF DETERMINATION OF QUALITY

Individual Case

PRE-EXISTING INSTRUMENT USED

Unspecified

Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a higher score

ALLOWANCE FOR PATIENT FACTORS

Unspecified

STANDARD OF COMPARISON

Internal time comparison

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

The Cardiac Rehabilitation/Secondary Prevention Performance Measure Writing Committee initially identified 39 factors from various practice guidelines and other reports that were considered potential performance measures for the Cardiac Rehabilitation/Secondary Prevention Performance Measurement Sets (see Table 1 of the original measure documentation for standard guidelines that were used to rate the classification of recommendations and level of evidence for assessing these factors). The group evaluated these factors according to guidelines established by the American College of Cardiology/American Heart Association (ACC/AHA) Task Force on Performance Measures. Those measures that were deemed to be most evidence-based, interpretable, actionable, clinically meaningful, valid, reliable, and feasible were included in the final performance measurement sets. Once these measures were identified, the writing committee then discussed and refined, over a series of months, the definition, content, and other details of each of the selected measures.

EVIDENCE FOR RELIABILITY/VALIDITY TESTING

Thomas RJ, King M, Lui K, Oldridge N, Pina IL, Spertus J, ACC/AHA Task Force Members. AACVPR/ACC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. J Cardiopulm Rehabil Prev 2007 Sep-Oct;27(5):260-90. [74 references] [PubMed](#)

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Association of Clinical Nurse Specialists, Preventive Cardiovascular Nurses Association, Society of Thoracic Surgeons. AACVPR/ACC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. J Am Coll Cardiol 2007 Oct 2;50(14):1400-33. [74 references] [PubMed](#)

Identifying Information

ORIGINAL TITLE

Performance measure A-1: cardiac rehabilitation patient referral from an inpatient setting.

MEASURE COLLECTION

[Cardiac Rehabilitation/Secondary Prevention Performance Measurement Sets](#)

MEASURE SET NAME

[Cardiac Rehabilitation/Secondary Prevention Performance Measurement Set A](#)

DEVELOPER

American Association of Cardiovascular and Pulmonary Rehabilitation/American College of Cardiology/American Heart Association

FUNDING SOURCE(S)

The Writing Committee had one face-to-face meeting at the outset of the writing project. Funding travel to the meeting was covered by the respective organizations (American Association of Cardiovascular and Pulmonary Rehabilitation [AACVPR], American College of Cardiology [ACC], and American Heart Association [AHA]). Conference calls were paid for by AACVPR. Other than in these cases, there were no other funding sources or reimbursements provided.

COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE

American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) Representatives: Randal J. Thomas, MD, MS (Physician, Preventive Cardiologist, Mayo Clinic, Rochester, MN); Marjorie King, MD (Physician, Cardiologist, Helen Hayes Hospital, West Haverstraw, NY); Karen Lui, RN, C, MS (Nurse, GRQ Consulting Firm, Washington, D.C.); Neil Oldridge, PhD (Exercise Science/Physiology, University of Wisconsin-Milwaukee, Milwaukee, WI).

American College of Cardiology (ACC) Representatives: Ileana Piña, MD (Physician, Cardiologist, Case Western Reserve University, Cleveland, OH).

American Heart Association (AHA) Representatives: John Spertus, MD, MPH (Physician, Cardiologist, Mid America Heart Institute/University of Missouri-Kansas City, MO).

FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST

Author Relationships with Industry -- American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR)/American College of Cardiology (ACC)/American Heart Association (AHA) Cardiac Rehabilitation/Secondary Prevention Performance Measures

Writing Committee Member	Research Grant	Speakers' Bureau/Honoraria/Expert Witness	Stock Ownership	Consultant/Advisory Board/Steering Committee
Randal J. Thomas, MD, MS, FAHA	Omron, Inc.	None	None	None
Marjorie King, MD, FAACVPR, FACC	None	None	None	Healthways
Karen Lui, RN, MS, FAACVPR	None	None	None	None
Neil Oldridge, PhD, FAACVPR	None	None	None	None
Ileana L. Piña, MD, FACC	Novartis	AstraZeneca	None	Food and Drug Administration (FDA)
	National Institutes of Health (NIH)	Novartis		
John Spertus, MD, MPH, FACC	Amgen	None	Health Outcomes Services	Amgen
	Atherotech		Outcomes Instruments	United Healthcare
	Roche Diagnostics			

ADAPTATION

Measure was not adapted from another source.

RELEASE DATE

2007 Sep

MEASURE STATUS

This is the current release of the measure.

SOURCE(S)

Thomas RJ, King M, Lui K, Oldridge N, Pina IL, Spertus J, ACC/AHA Task Force Members. AACVPR/ACC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. J Cardiopulm Rehabil Prev 2007 Sep-Oct;27(5):260-90. [74 references] [PubMed](#)

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MEASURE AVAILABILITY

The individual measure, "Performance Measure A-1: Cardiac Rehabilitation Patient Referral from an Inpatient Setting," is published in "AACVPR/ACC/AHA 2007 Performance Measures on Cardiac Rehabilitation for Referral to and Delivery of Cardiac Rehabilitation/Secondary Prevention Services." This article is available from the [American Association of Cardiovascular and Pulmonary Rehabilitation](#), the [American College of Cardiology](#), and the [American Heart Association](#) Web sites.

NQMC STATUS

This NQMC summary was completed by ECRI Institute on July 18, 2008. The information was verified by the measure developer on September 3, 2008.

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